

WHAT IS CLAIMED IS:

1. A display communications device comprising:
a housing that contains a processor;
5 means, coupled to the processor, for receiving input radio signals; and
a collapsible display that is mechanically coupled to the housing and
electrically coupled to the processor,
wherein the display has a surface area that is larger than any cross-sectional
area of the housing, and the processor is adapted to extract display data from the input radio
signals, and to provide a representation of the display data to the display.
2. The display communications device of claim 1, further comprising means for
transmitting output radio signals, and the processor is further adapted to receive commands
from the display and to form the output radio signals based on the received commands.
3. The display communications device of claim 2, wherein the display is adapted
to process touch commands and wherein the received commands are based on the touch
commands.
- 20 4. The display communications device of claim 1, further comprising:
a speaker that is coupled to the processor for transmitting output audio signals,
wherein the processor is adapted to extract audio data from the input radio
signals, and to provide to the speaker output audio signals that are representative of the
extracted audio data.
- 25 5. The display communications device of claim 1, further comprising:
a microphone that is coupled to the processor for receiving input audio signals;
wherein the processor is adapted to form output radio signals based on the
input audio signals.
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6. The display communications device of claim 5, wherein the processor is adapted to form the output radio signals by modulating a carrier signal with a representation of the input audio signal.

7. The display communications device of claim 5, wherein the processor is adapted to determine whether the input audio signals are telephone signals or commands.

8. The display communications device of claim 7, wherein the processor is adapted to form output radio signals that initiate a connection between the communications device and a remote network device.

9. The display communications device of claim 8, wherein the processor is adapted to connect to the Internet.

10. The display communications device of claim 1, wherein the housing contains a low voltage power supply.

11. The display communications device of claim 10, wherein the power supply is a thin film power supply.

12. The display communications device of claim 1, wherein the means for receiving input radio signals is a smart antenna.

13. The display communications device of claim 1, wherein the means for receiving input radio signals includes means for receiving signals in compliance with third generation digital radio standards.

14. The display communications device of claim 1, wherein the display comprises a plurality of smart pixels.

15. The display communications device of claim 1, wherein the display is a flexible display and the communications device comprises a rod that is rotationally coupled to the housing and fixedly coupled to a first end of the display such that the display can be wound around the rod.

16. The display communications device of claim 15, wherein the rod is coupled to the interior of the housing.

17. The display communications device of claim 15, wherein the rod is coupled to the exterior of the housing.

18. The display communications device of claim 1, further comprising a locking mechanism for holding the display in an extended position.

19. The display communications device of claim 1, wherein the display is a foldable display and a first end of the display is coupled to the housing such that the display can be folded into or onto the housing.

20. The display communications device of claim 1, wherein the display is touch responsive.

21. The display communications device of claim 20, wherein the display provides touch signals to the processor and the processor performs responsive operations in response to receiving the touch signals.

22. The display communications device of claim 1, further comprising display memory for storing display data that corresponds to information currently being displayed.

23. The display communications device of claim 22, wherein the display memory is embedded into the display.

24. The display communications device of claim 22, wherein the display memory is embedded into the pixels.

25. The display communications device of claim 22, wherein the display memory is contained in the housing.

26. The display communications device of claim 1, wherein the display is removably coupled to the housing.

27. The display communications device of claim 26, wherein the display is adapted to be removably coupled to each of a plurality of external devices.

28. The display communications device of claim 27, wherein the display is adapted to automatically configure to the external device to which it is coupled.

29. The display communications device of claim 1, wherein the display data is video data.

30. The display communications device of claim 1, wherein the display includes a plurality of bistable pixels.

31. The display communications device of claim 1, wherein the processor updates the display by providing a data packet that includes a pixel address and a brightness that corresponds to a pixel located at the pixel address.

32. The display communications device of claim 1, wherein the processor is adapted to compare a current image with a previous image, to identify one or more pixels having a pixel brightness that needs to be changed to convert the display from the previous image to the current image, and to provide the display with display data that causes the pixel brightness of the one or more identified pixels to change.

34. The display communications device of claim 1, further comprising local processing power for each pixel.

36. The display communications device of claim 35, wherein the processor is adapted to determine whether the device is in a telephone mode or a command mode and, if the device is in command mode, to respond to voice activation commands.

38. The display communications device of claim 37, wherein each pixel includes a local processor and a memory that contains a pixel address associated with the pixel.

39. The display communications device of claim 37, wherein the pixels are adapted to configure themselves with respect to grayscale and resolution.

40. The display communications device of claim 39, wherein the pixels include groups of sub-pixels, and each sub-pixel includes a number of light emitting devices.

41. The display communications device of claim 40, wherein the number of light emitting devices that form a sub-pixel depends on grayscale and resolution of the pixel.

42. The display communications device of claim 1, wherein the display comprises a plurality of organic light emitting devices (OLEDs).

43. The display communications device of claim 42, wherein the display comprises a plurality of small molecule OLEDs.

44. The display communications device of claim 42, wherein the display comprises a plurality of polymer OLEDs.

45. The display communications device of claim 1, wherein the display comprises a plurality of stacked organic light emitting devices (SOLEDs).

46. The display communications device of claim 1, wherein the display comprises a plurality of transparent organic light emitting devices (TOLEDs).

47. The display communications device of claim 42, wherein the OLEDs are integrated with organic photodetectors.

48. The display communications device of claim 47, wherein the OLEDs form bistable pixels.

49. The display communications device of claim 1, further comprising a video imager.

50. The display communications device of claim 49, wherein the display comprises a display border and the video imager is integrated into the display border.

51. The display communications device of claim 49, wherein the display comprises a display screen and the video imager is integrated into the display screen.

52. A display communications device comprising:
a housing that contains a processor;
means, coupled to the processor, for receiving input radio signals; and

5 a display that is mechanically coupled to the housing and electrically coupled to the processor, wherein the display has a surface area that is larger than any cross-sectional area of the housing, and the processor is adapted to extract display data from the input radio signals, and to provide a representation of the display data to the display.

53. A display communications device comprising:
a housing that contains a processor;
means, coupled to the processor, for receiving input radio signals; and
a flexible display that is mechanically coupled to the housing and electrically
coupled to the processor, and the processor is adapted to extract display data from the input
radio signals, and to provide a representation of the display data to the display.

54. A communications method comprising:
providing a communications signal at a base station; and
transmitting the communications signal from the base station to a display

20 communications device, wherein the display communications device comprises:

a housing that contains a processor;
means, coupled to the processor, for receiving input radio signals; and
a collapsible display that is mechanically coupled to the housing and
electrically coupled to the processor,

25 wherein the display has a surface area that is larger than any cross-sectional area of the housing, and the processor is adapted to extract display data from the input radio signals, and to provide a representation of the display data to the display.

55. A communications method comprising:

receiving at a base station a communications signal from a display communications device, wherein the display communications device comprises:

a housing that contains a processor;

5 means, coupled to the processor, for receiving input radio signals; and

a collapsible display that is mechanically coupled to the housing and electrically coupled to the processor,

wherein the display has a surface area that is larger than any cross-sectional area of the housing, and the processor is adapted to extract display data from the input radio signals, and to provide a representation of the display data to the display; and processing the received communications signal at the base station.